SHARED MEMORY

ABSTRACT OF THE INVENTION

A system and method for tracking data using a sharing memory is disclosed. In one embodiment the system comprises a plurality of queues, each configured to track the order of receipt of data items. The plurality of queues utilize a shared memory instead of associating memory with each queue. Memory addresses are dynamically allocated and de-allocated based on the needs of each queue. As a queue utilizes all its originally assigned addresses, additional memory addresses may be allocated to the queue. Likewise, as a queue outputs its contents, unused memory addresses are de-allocated so the addresses may be used by other queues. In one embodiment, the addresses are allocated in blocks by a block identifier comprising a single memory address. One or more counters in each queue increments and decrements the block identifier to access different memory locations. In one embodiment each queue includes an order tracking module to track the order of receipt of each data item based on the address at which the data item is stored.